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1 DEC

6131

NCR
14-7659



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

RBT18650-101
Job Sheet 167044



Part No: RBT18650-101 Job Qty: 1 ea

Part Name: TAIL ROTOR GEAR BOX DRAIN TOOL



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 10/23/17

Job Tracking No:

Due Date: 10/31/17

Created By: Marie Lajeunesse

Type: Stock

Description:

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier	
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time
90	Small Fab	1 pcs		10/31/17	0.00	1.00	Small Fab-4	
110	QC	1 pcs		10/31/17	0.00	0.00	QC5	
115	Packaging	1 pcs		10/31/17	0.00	0.00	Packaging3	
120	QC21-FG	1 Ea		10/31/17	0.00	0.00	QC21	

Part Op 90 - Assemble as per DWG. Sheet 1

Descriptions: 110 - Identify as per DWG sheet 1 note 6.

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Small Fab	1288N142	1	0	0	0
	1315	1	0	0	0
	RBT18650-101-1	1	0	0	0
	RBT18650-101-5	1	0	0	0

Part Specifications

Specifications could not be found.

Plex 10/23/17 1:49 PM Dart.lajeunesse.marie

POSITIVE RECALL
OCT 23 2017

EFFECTIVE AUTH
RELEASED DATE 18-01-25

Rev C
as per ECN 18.512

DART
AEROSPACE
S030865



TAIL ROTOR GEAR BOX DRAIN TOOL

PART NO:
Revision:
Operation:
Change No:

RBT18650-101

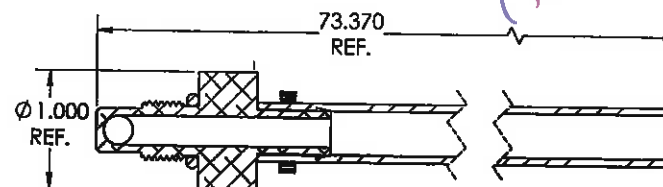
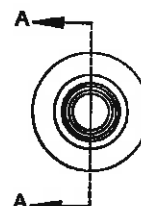
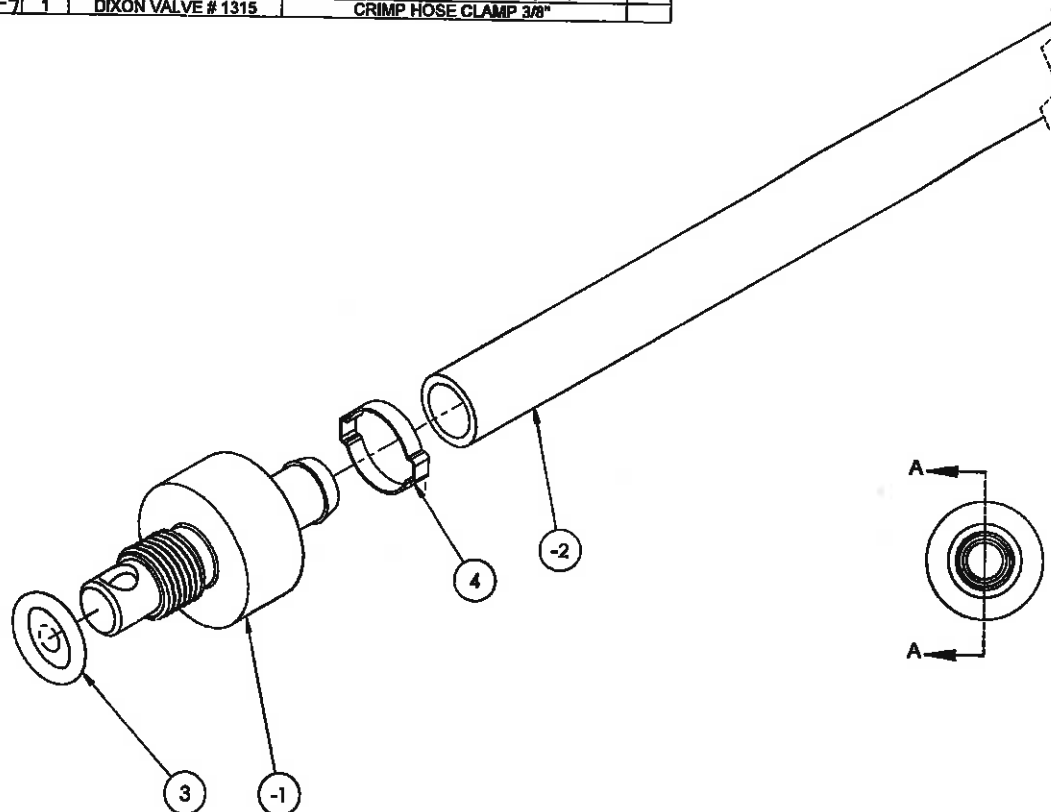
Start up Operation

Mfg Date: 01/10/18
Job No: 167044

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

ITEM #	QTY	PART #	TITLE	PG
-1	1	RBT18650-101-1	DRAIN TOOL	2
-2	1	RBT18650-101-2-5	HOSE 1/2" OD x 3/8" ID x 6 ft	3
-3	1	McMaster#1288N142	O RING .424" ID x .103" WIDTH	
-4	1	DIXON VALVE # 1315	CRIMP HOSE CLAMP 3/8"	

REV.	DESCRIPTION	DATE	BY	APPROVED
A	SEE ECN 17-630	17.08.05	VM	WM



SECTION A-A

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 167044 M.J.
70-23

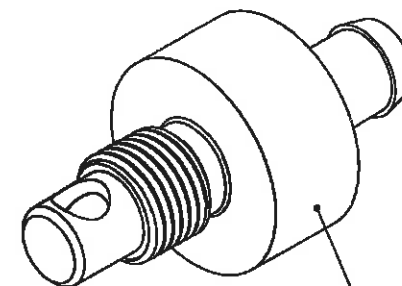
RBT 18650-101 DRAIN TOOL : TAIL ROTOR GEAR BOX

NOTES:
1) MATERIAL: N/A
2) FINISH: N/A
3) HEAT TREAT: N/A
4) SPEC: N/A
5) BREAK ALL SHARP EDGES : N/A
6) IDENTIFICATION: USE A TAG ON HOSE FOR P/N

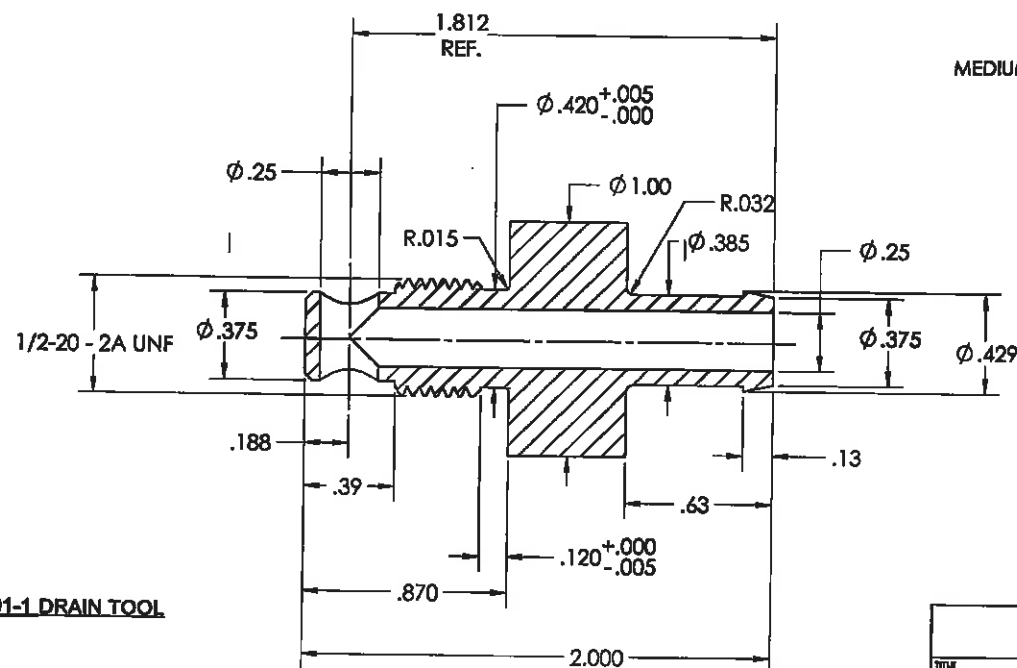
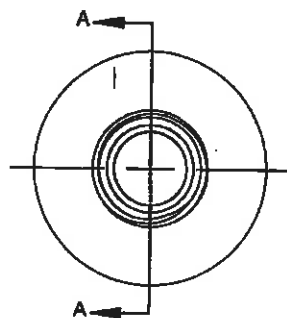
PRELIMINARY ISSUE

		Haverhill, Ontario, Canada	
		TITLE DRAIN TOOL; TAIL ROTOR GEAR BOX	
Dwg No. RBT18650-101		REV A	
DESIGNED BY: VM 05/08/2017	CHECKED BY: VM 05/15/2017	DRAWN BY: SAC 05/15/2017	CHECKED BY: PD 05/15/2017
ENG. APPR: PD 05/15/2017	QA APPR: PD 05/15/2017	APPROVED: WM 05/15/2017	DATE: 15/08/2017
SCALE: NTS		SHEET 1 OF 3	
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FB1



MEDIUM DIAMOND KNURL-



RBT18650-101-1 DRAIN TOOL

SECTION A-A

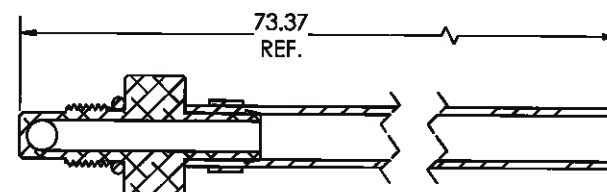
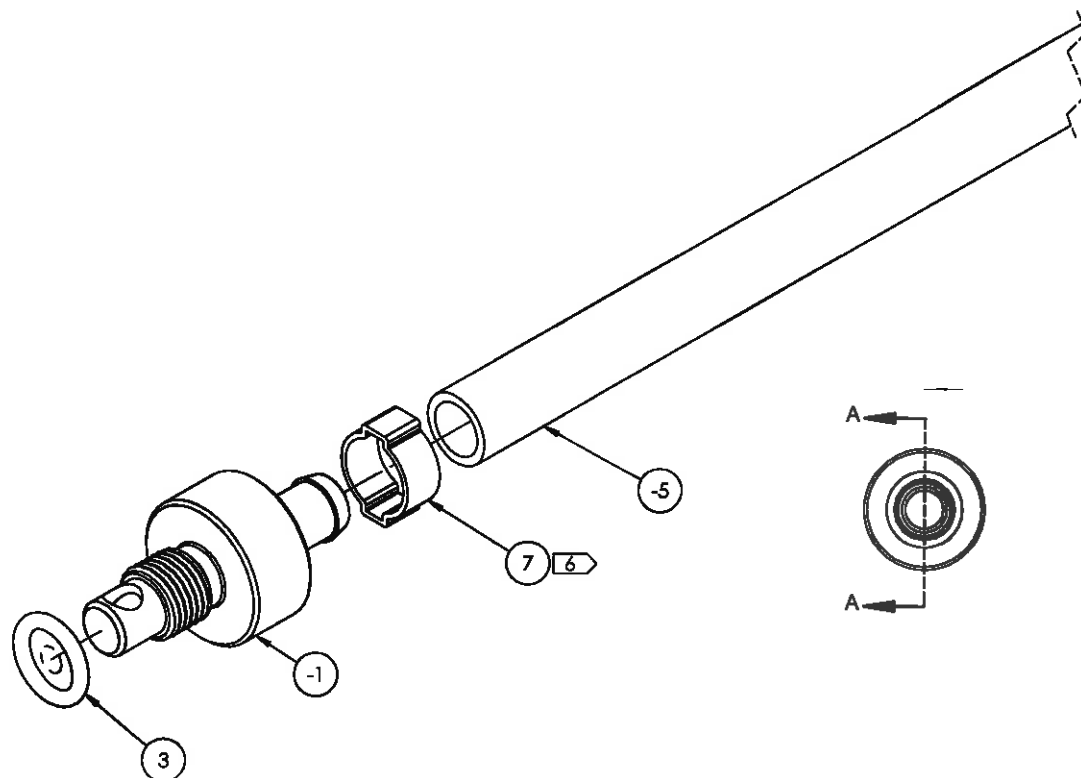
NOTES:

- NOTES:**
 1) MATERIAL: 6061-T8
 2) FINISH: RED ANODIZE
 3) HEAT TREAT: N/A
 4) SPEC: MIL-A-8825, TYPE II, CLASS 2; WATER SEALANT
 5) BREAK ALL SHARP EDGES .015 x 45° OR .015R
 6) IDENTIFICATION: N/A

		Hawthorne, Ontario, Canada	
TITLE DRAIN TOOL			
P/NB NO. RBT18650-101-1		REV. NO. 00	
DESIGN BY: DRAWN BY: CHECKED: MFG. APPR: APPROVED: DATE:	MM 03/2017 SAC 11/02/2017 SAC 11/02/2017 DD 11/28/2017 MM 11/28/2017 11/22/2017	JOHN S. JONES J. S. JONES J. S. JONES J. S. JONES J. S. JONES J. S. JONES	FRACTIONS & UNITS ANGLES & SURFACES SURFACES & TOLERANCES DIMENSIONS & TOLERANCES DIMENSIONS & TOLERANCES DIMENSIONS & TOLERANCES DIMENSIONS & TOLERANCES
SCALE: NTS		WEIGHT: 0.0 LBS	
COPYRIGHT © 2017 BY DART AEROSPACE LTD.			
THIS DRAWING IS PRINTED AND COMPILED AND IS UNLAWFUL TO REPRODUCE OR TRANSMIT IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.			

ITEM #	QTY	PART #	TITLE	PG
-1	1	RBT18650-101-1	DRAIN TOOL	2
-5	1	RBT18650-101-5	HOSE 1/2" OD x 3/8" ID x 6'	3
3	1	McMaster#1288N142	O RING .424" ID x .103" WIDTH	-
7	1	McMaster#6541K37	DOUBLE PINCH CLAMPS 27/64" TO 33/64" ID	-

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE	17-630	17.06.06	VM	VM
B	RENUMBER PARTS, TEMPLATE UPDATED	17-690	17.10.02	VM	VM
C	ITEM 7 CHANGED FOR McMM, TEMPLATE UPDATED	18-512	18.1.22	VM	ML



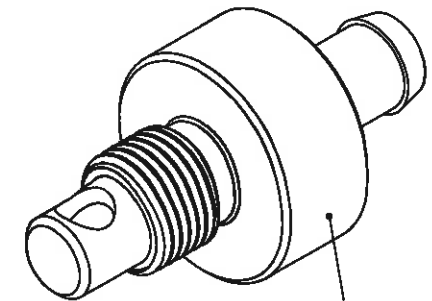
SECTION A-A

RBT18650-101 TAIL ROTOR GEAR BOX DRAIN TOOL

- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: N/A
 - 3) HEAT TREAT: N/A
 - 4) SPEC: N/A
 - 5) BREAK SHARP EDGES : N/A
 - 6) IDENTIFICATION: PER QSI 044 METHOD 6.5

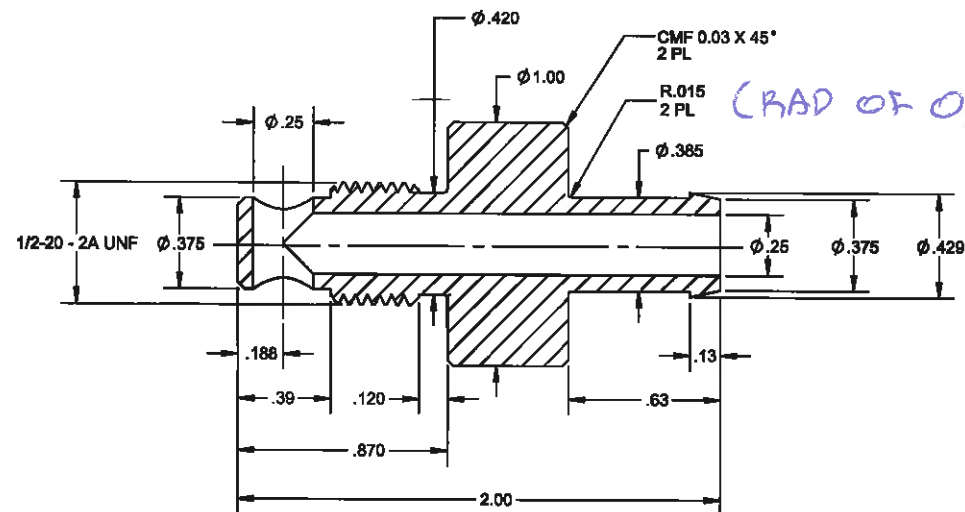
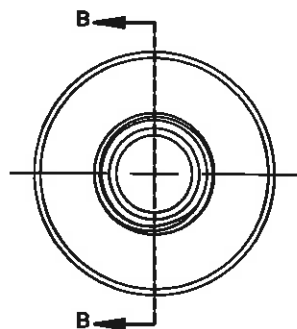
DART AEROSPACE Hawthornbury, Ontario, Canada	
TITLE TAIL ROTOR GEAR BOX DRAIN TOOL	
PART NO. RBT18650-101	REV C
TOOL NO. RBT18650-101	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES INTERPRET PER ASME Y14.5M-2009 DIMENSIONS APPLY AFTER FINISHING	
DESIGNED BY: VM 05/06/2017	TOLERANCES: XX ±.005 FRACTIONS ±.1M XX ±.01 ANGLES ±.8° X ±.1 SURFACE ROUGHNESS
DRAWN BY: VM 01/22/2018	APPROVED BY: ML 01/23/2018
CHECKED BY: VM 01/22/2018	SCALE: NTS SHEET 1 OF 3
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REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
C	TEMPLATE UPDATED	18-512	18.1.22	VM	ML



MEDIUM DIAMOND KNURL

(RAD OF 0.032 IS ACCEPTABLE)



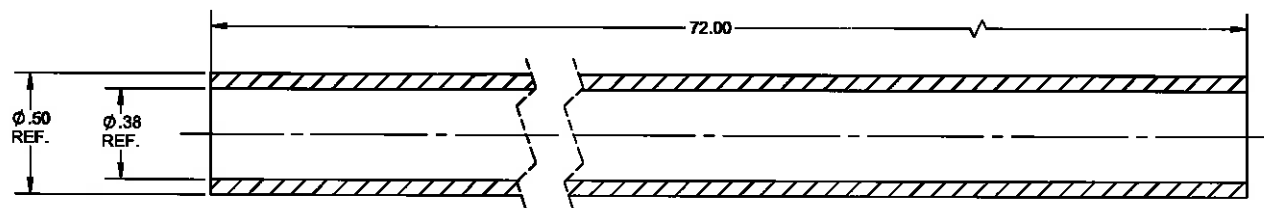
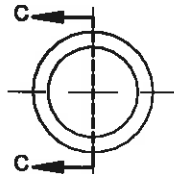
RBT18650-101-1 DRAIN TOOL

SECTION B-B

- NOTES:**
- 1) MATERIAL: 6061-T6
 - 2) FINISH: RED ANODIZE
 - 3) HEAT TREAT: N/A
 - 4) SPEC: MIL-A-8625, TYPE II, CLASS 2; WATER SEALANT
 - 5) BREAK SHARP EDGES .015 x 45° OR .015R
 - 6) IDENTIFICATION: N/A

		Hawthorn, Ontario, Canada	
		TITLE	
DRAIN TOOL		REV C	
PART NO. RBT18650-101-1		REV C	
TOOL NO. RBT18650-101		UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES INTERPRET PER ASME Y14.5M-2018 DIMENSIONS APPLY AFTER FINISHING	
DESIGNED BY: VM 05/05/2017	TOLERANCES:	FRACTIONS ± 1/8	
DRAWN BY: VM 01/22/2018	XXX ± .005	ANGLES ± .5°	
CHECKED BY: VM 01/22/2018	XX ± .01	SURFACE ROUGHNESS	
INFO REVIEW BY: DP 01/23/2018	X ± .1	SCALE: NTS	
APPROVED BY: ML 01/25/2018	SCALE: NTS	SHEET 2 OF 3	
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REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
C	TEMPLATE UPDATED	18-512	18.1.22	VM	ML



RBT18650-101-5 HOSE 1/2" OD x 3/8" ID x 6 ft

SECTION C-C

NOTES:

- 1) MATERIAL: KURI TEC # K010-0608
- 2) FINISH: N/A
- 3) HEAT TREAT: N/A
- 4) SPEC: N/A
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A

DART AEROSPACE Newbury, Ontario, Canada	
TITLE HOSE 1/2" OD x 3/8" ID x 6 ft	
PART NO. RBT18650-101-5	REV C
TOOL NO. RBT18650-101	
INITIALS AND DATE	
DESIGNED BY: VM 05/09/2017	TOLERANCES: UNLESS OTHERWISE SPECIFIED:
DRAWN BY: VM 01/22/2018	DECIMALS ARE IN INCHES
CHECKED BY: VM 01/22/2018	FRACTIONS ARE IN INCHES
INFO REVIEW BY: DP 01/23/2018	INTERFITS PER ASME Y14.5M-2018
APPROVED BY: ML 01/25/2018	DIMENSIONS APPLY AFTER FINISHING
SCALE: NTS	SHEET 3 OF 3
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DQA:

18

Date:

Oct 30/19

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed:

1

Date:

Work Order update only ☐

Work Order: <u>167044</u> Part No. <u>RST186507101</u> NCR No. <u>19-7659</u>		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☒ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☒</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☒	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																			
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Large Fab ☐	Composite ☐	Supplier ☐																																																																							
Date: <u>18-01-25</u>		Step #: <u>115</u>		QTY Effective: <u>1</u>		MRB (QSI042) Approval <u>18-01-26</u>																																																																			
Description Work Order Deviation				Disposition		Completed By																																																																			
part acceptable with rad of .032 instead of .015' E.C. part originally made under Rev P61 and				acceptable to release under Rev C		<u>PD 18-01-25</u> Lead hand / Supervisor Approval Verification																																																																			
						<u>PD 18-01-25</u> QC / QA Coordinator Approval																																																																			
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Root Cause <table style="width:100%;"> <tr> <td>Environment ☐</td> <td>No Re-verification ☐</td> <td>Pressure/Forced ☐</td> </tr> <tr> <td>Design ☒</td> <td>Operator ☐</td> <td>Bending ☐</td> </tr> <tr> <td>Doc/Data ☐</td> <td>Offset/Setup ☐</td> <td>Centre Not Concentric ☐</td> </tr> <tr> <td>Equip/Tooling ☐</td> <td>Supplier ☐</td> <td>Cracks ☐</td> </tr> <tr> <td>Handling/Pre ☐</td> <td>Training ☐</td> <td>Crimp/Kink/Ripple/Wave ☐</td> </tr> <tr> <td>Material ☐</td> <td>Use for Testing ☐</td> <td>Cuffs ☐</td> </tr> <tr> <td>Internal Transport ☐</td> <td>Poor Information ☐</td> <td>Crushing ☐</td> </tr> <tr> <td>Tribal Knowledge ☐</td> <td>Rushing ☐</td> <td>Heat Treat ☐</td> </tr> <tr> <td>LOA ☐</td> <td>Product Improvement ☐</td> <td>Wave/Twist in Tube ☐</td> </tr> <tr> <td>Substation ☐</td> <td>Process Improvement ☐</td> <td>Marks/Chatter ☐</td> </tr> <tr> <td>Past Expiry Date ☐</td> <td>Manufacturing Process ☐</td> <td></td> </tr> <tr> <td>Misidentified ☐</td> <td>Past Due ☐</td> <td></td> </tr> </table>				Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Design ☒	Operator ☐	Bending ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Past Expiry Date ☐	Manufacturing Process ☐		Misidentified ☐	Past Due ☐		FAULT CATEGORY <table style="width:100%;"> <tr> <td>Temperature/Cure ☐</td> <td>Power Loss/Surge ☐</td> <td>Positioned Wrong ☐</td> </tr> <tr> <td>Set-up ☐</td> <td>Folio/Program ☐</td> <td>Outside Dimensions ☐</td> </tr> <tr> <td>BOM/Route ☐</td> <td>Grain ☐</td> <td>Over/Under tolerance ☐</td> </tr> <tr> <td>Broken/Damage/Defect ☐</td> <td>Weld ☐</td> <td>Part Incorrect ☐</td> </tr> <tr> <td>Inspection Incomplete/Unqualified ☐</td> <td>Wrong Stock Pulled ☐</td> <td>Part Lost/Missing ☐</td> </tr> <tr> <td>Contamination ☐</td> <td>Out of Sequence ☐</td> <td>Part Moved ☐</td> </tr> <tr> <td>Countersink ☐</td> <td>Off-set ☐</td> <td>☒ Drawing ☐</td> </tr> <tr> <td>Cut Too Short ☐</td> <td>Mislabeled ☐</td> <td>Finish ☐</td> </tr> <tr> <td>Instructions Incomplete/Unclear ☐</td> <td>Fit/Function ☐</td> <td>Misread ☐</td> </tr> <tr> <td>Drill Holes ☐</td> <td>Misaligned/off center ☐</td> <td>Turning Sequence ☐</td> </tr> </table>				Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Countersink ☐	Off-set ☐	☒ Drawing ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
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